

REMARKS/ARGUMENTS

Briefly, applicants wish to point out the claimed invention which is a novel and cost-effective process for stripping and cleaning organic coatings. The removal of residual adhesive materials from sidewalls formed in etched metallic layers of dense submicron topography on semiconductor substrates. Cleaning is accomplished to a plurality of substrates contained in a substrate carrier and immersed in a liquid chemical. The liquid chemical is agitated by gas bubbles directed upward and between each substrate in a tumultuous manner while scrubbing the boundary layer of the substrates.

Claims 11-16 and 18 remain in this application.

Reconsideration for the allowance of Claims 11-16 and 18 under 35 U.S.C. 103(a) as being unpatentable over Advocate, Jr. et al. (U.S. 5,904,156) in view of Molinaro (U.S. 5,082,518), is requested, in light of the following arguments.

While Advocate et al. teaches a method of removal of a film of photoresist, which can be utilized in semiconductor technology and particularly for the removal of photoresist from the vicinity of C4 structures. Advocate's method is directed towards stripping photoresist from a substantially planar object with C4 structures. Moreover, Advocate et al., does not teach a method for enhancing cleaning of organic residue from pockets and sidewalls that are analogous to narrow spaced and deep walled canyons.

Molinaro teaches a gas diffusion system for evenly distributing injected gas in a bath wherein gas manifold is connected/welded to a flat quartz plate having sized holes for evenly spreading and distributing the gas bubbles throughout the treatment liquid.

Molinaro specifically indicates that quartz has material integrity and can have appropriate surface finish to maintain it as inert to the chemicals being used. The inventors agree with Examiner Kornakov regarding Molinaro's choice of using quartz because of its inert properties. This indeed was a wise choice, however, the most telling difference, of the invention, is a flexible tubing, that is also inert, the tubing is inserted into a sinuous groove at the bottom surface of the quartz gas distribution plate. Guide holes, formed through the top surface of the gas distribution plate intersect with the flexible tubing. A plurality of guide holes are spaced along each leg of the sinuous groove. The guide holes are used for drilling into the flexible tubing using a stepped drill. This provides a user of the invention, a method for selecting from a range of stepped drills, a specific drill diameter to drill holes in tactical locations in the flexible tube. This is done to enhance scrubbing performance of the liquid chemical by the action of the escaping gas. The adjustment is easily done by re-drilling the tubing, conceivably several times as needed, with minimal effort.

The method of claims 11 and 15 , and the manner as illustrated in Figs. 2 are neither taught nor suggested by the prior art.

Applicant respectfully request that a timely Notice of Allowance be issued
in this case.

Respectfully submitted,

By 

Stephen B. Ackerman, Reg. # 37,761

Tel.: (845) 452-5863